

REMARKS

Claims 12-14, 16-22, 26-29 and 33-38 are pending in this application. The amendments to claims 12, 26 and 33 are supported in paragraph [0052] of the published application. No new matter has been added.

It is respectfully requested that the rejection be reconsidered as the claims have been clarified to recite culturing in a plant medium which is chemically distinguished from the prior art animal medium. In brief, culturing *Pantoea agglomerans* in animal medium is the known prior art method of culturing. As explained in the instant specification:

[0034] Meanwhile, when focusing on the bacteria which live in asymbiotic relationship with a plant, *Pantoea agglomerans* which is a symbiotic bacterium with wheat contains a low molecular weight lipopolysaccharide effective for immunostimulation as a component. **However, up to now, to extract the low molecular weight lipopolysaccharide, it has been necessary to culture *Pantoea agglomerans* using an expensive medium in which the major protein contained in the medium is derived from an animal, e.g., NZ amine, trypton or casamino acids.** Therefore, it has been difficult to inexpensively provide as a highly common immunopotentiator. Simultaneously, the possibility that unknown harmful substances such as those derived from BSE contaminated animals could not be denied. (emphasis added)

The claimed invention, in contrast, cultures *P. agglomerans* in a medium containing no component derived from an animal.

Because *P. agglomerans* contains low molecular weight lipopolysaccharides (LMW-LPS), one can generate LMW-LPS by culturing *P. agglomerans* in either medium. But present inventors have discovered that the extract generated in plant medium is different from the extract generated in animal medium. In fact some of the chemical differences are described in the instant specification as:

[0101] **As is evident from the above results, it is obvious that the fermented wheat extract is different from the limulus positive glycolipid and the low molecular weight lipopolysaccharide in protein content, sugar content, nucleic acid content (except the limulus positive glycolipid because of no data), content of the limulus positive substance and iodine-starch reaction, and it is clear**

that the present substance is novel. The above results have been simply summarized in Table 7. That is, the fermented plant extract in the present Examples is novel which is different from the limulus positive glycolipid and the low molecular weight lipopolysaccharide in that it exhibits the following physicochemical properties. (emphasis added)

All claims now define the novel extract generated in plant medium. The effect of the invention is disclosed in paragraphs 0052 to 0054 of the present specification:

[0052] **According to the present invention, since the culture is performed in the medium containing no component derived from an animal, there is no contamination with impurities derived from animal components. Therefore, there is no possibility of unknown harmful substances such as those derived from BSE contaminates, and it is possible to provide a highly safe and inexpensive method for producing fermented plant extract capable of addressing various intended uses and safely and inexpensively provide fermented plant extract or fermented plant extract powder containing the immunopotentiator.** (emphasis added)

[0053] It has never been conceived and there is no fact easily presumed from findings of the conventional fermentation technology that the fermentation and culture can be performed by a simple process that the material derived from an edible plant is exclusively fermented by the facultative anaerobic gram-negative bacterium which **lives in a symbiotic relationship with a plant** and simultaneously the facultative anaerobic gram-negative bacterium is cultured. (emphasis added)

The empirical effects of the invention are further summarized in Tables 2-7, as will be explained herein.

Claims 12-14, 16-22, 26-29, and 33-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chotani et al (US 2003/0203454) in view of Soma et al (US 5,494,819).

In brief, the combination of references nowhere discloses culturing *P. agglomerans* in a medium containing no component derived from an animal.

Of the *Pantoea* genus, Chotani concerns only *Pantoea citrea* and nowhere discloses *P. agglomerans*. Furthermore, it was shown in C. J. Pujol et al: *Genetic and Biochemical Characterization of the Pathway in Pantoea citrea Leading to Pink Disease of Pineapple*, Journal of Bacteriology, Vol. 182, No. 8, Apr. 2000, p. 2230–2237, submitted with the November 28, 2008 response, that *Pantoea citrea* causes pink disease of pineapple, and thus obviously cannot live in symbiotic relationship with a plant as claimed. Also, it is not generally known that *Pantoea citrea* has an immunopotential effect as claimed in claim 17.

While Soma discloses *P. agglomerans*, it nowhere discloses a pure plant medium. Soma discloses culturing in L-broth medium:

The L-broth was prepared by dissolving **10 g of polypeptone** (Difco Co.), 5 g of yeast extracts (Difco Co.) and special grade NaCl (Wako-Jun-Yaku Co. in Japan) in distilled water, adjusting the pH of the solution to 7.5 with NaOH followed by autoclaving, and then adding a 400-fold diluent of a 40% solution of special grade glucose (Wako-Jun-Yaku Co.) to the solution. (col. 9, lines 2 to 9 of Soma) (emphasis added)

Polypeptone is a known animal derived product.

Tables 2-7 in the instant specification summarize results of experiments showing significant empirical differences between culturing in plant versus animal mediums in terms of protein, sugar, nucleic acid, limulus active substance contents and the iodine-starch reaction.

In short, the combination of Chotani and Soma still does not teach the culturing of *P. agglomerans* in a medium containing no component derived from an animal (claims 12, 26 and 33), **or any empirical advantages of doing so**. The references merely show what has been known, as explained above. Thus a *prima facie* rejection of obviousness cannot be logically supported based on this combination.

In light of the evidence presented herein, it is respectfully requested that this rejection be reconsidered and withdrawn.

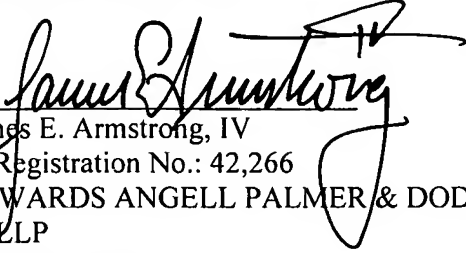
In view of the above showing, applicant believes the pending application is in condition for allowance.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 04-1105.

Dated: January 29, 2009

Customer No. 21874

Respectfully submitted,

By 
James E. Armstrong, IV
Registration No.: 42,266
EDWARDS ANGELL PALMER & DODGE
LLP
P.O. Box 55874
Boston, Massachusetts 02205
(202) 478-7375
Attorneys/Agents For Applicant